

Message Text

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DRAFTED BY OES/NET:LVNOSENZO:SK
APPROVED BY OES/NET:LVNOSENZO
T - MR. MCGAFFIGAN
D - MR. LAMB
IO/SCT - MS. JILLSON
ERDA - MR. SIEVERING
S/S - MR. REDDY
PM/NPP - MR. OPLINGER
S/P - MR. KAHAN
ACDA - MR. VAN DOREN
EUR/RPE:MR. LAASE (SUBS)
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FM SECSTATE WASHDC
TO USMISSION IAEA VIENNA IMMEDIATE
AMEMBASSY BONN IMMEDIATE
AMEMBASSY BRUSSELS IMMEDIATE
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AMEMBASSY ROME IMMEDIATE
AMEMBASSY TOKYO IMMEDIATE
AMEMBASSY STOCKHOLM IMMEDIATE

C O N F I D E N T I A L STATE 091828

EXDIS
CONFIDENTIAL

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E.O. 11652: GDS

TAGS: ENRG, PFOR

SUBJECT: FUEL CYCLE EVALUATION PROGRAM

1. AS A FOLLOW-UP TO PRESIDENT'S NUCLEAR POLICY STATE-
MENT OF APRIL 7, WE PLAN TO INITIATE DISCUSSIONS OF OR-
GANIZATIONAL AND SUBSTANTIVE ELEMENTS OF PROPOSED INTER-
NATIONAL NUCLEAR FUEL CYCLE EVALUATION PROGRAM IN A NUMBER

OF FORUMS. THIS INCLUDES EXPLORATORY DISCUSSIONS WITH OTHER SUPPLIERS IN LONDON IN MULTILATERAL MEETING APRIL 28-29 AND ASSOCIATED BILATERALS AND WITH KEY CONSUMER COUNTRIES IN MARGINS OF SALZBURG CONFERENCE.

2. SUCCESSFUL INITIATION OF EVALUATION PROGRAM INCLUDING BROADEST POSSIBLE ACCEPTANCE AND PARTICIPATION IS ESSENTIAL ELEMENT OF OUR OVERALL NON-PROLIFERATION STRATEGY. ITS IMPORTANCE HAS BEEN SHARPENED BY ADVERSE REACTION AT FEBRUARY BG MEETING AND AT PERSEPOLIS TECHNOLOGY MEETING TO RESTRAINT BY SUPPLIERS IN EXPORT OF SENSITIVE TECHNOLOGIES AND ATTEMPTS TO UPGRADE SAFEGUARDS AND CONTROLS.

3. FOLLOWING IS PROPOSED NON-PAPER OUTLINING POSSIBLE FRAMEWORK OF EVALUATION PROGRAM.

4. BEGIN TEXT. THE INTERNATIONAL NUCLEAR FUEL CYCLE EVALUATION PROGRAM (INFCEP) (A POSSIBLE APPROACH).

I. PURPOSE AND SCOPE.

THE PURPOSE OF THE INTERNATIONAL EVALUATION WOULD BE TO ENHANCE INTERNATIONAL COOPERATION IN DEALING WITH COMMON CONCERNS RELATED TO NUCLEAR POWER, AND TO EXAMINE PRESENT AND FUTURE FUEL CYCLE ALTERNATIVES THAT WOULD REDUCE CONFIDENTIAL

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FUTURE PROLIFERATION RISKS WHILE MEETING WORLD ENERGY NEEDS. THE PROGRAM SCOPE WOULD INCLUDE TWO MAJOR ELEMENTS:

--STUDY OF CURRENT GENERATION REACTORS WITH A VIEW TOWARD SOLVING FRONT-END PROBLEMS (E.G., FUEL ASSURANCES AND WAYS TO EXTEND UTILIZATION OF URANIUM AND OTHER FERTILE/FISSILE MATERIAL) AND BACK-END PROBLEMS (E.G., SHORT-TERM AND LONG-TERM SPENT FUEL STORAGE); AND,

--STUDY OF FUTURE GENERATION REACTORS AND FUEL CYCLES WITH EMPHASIS ON CYCLES THAT UTILIZE NON-SENSITIVE FUELS AND ON INTERNATIONAL ARRANGEMENTS FOR REDUCING PROLIFERATION RISKS IN THE MORE SENSITIVE ELEMENTS OF THE VARIOUS FUEL CYCLES.

II. INTERNATIONAL ORGANIZATION.

INFCEP WOULD INVOLVE PARTICIPATION OF BOTH MAJOR INDUSTRIAL AND KEY DEVELOPING COUNTRIES IN A TECHNICAL EVALUATION OF NUCLEAR FUEL CYCLE ALTERNATIVES. IT WOULD BE DESIRABLE TO UTILIZE EXISTING CAPABILITIES TO THE EXTENT PRACTICABLE (E.G., THE IAEA FORUM AND SECRETARIAT CAPABILITIES) BUT WE SHOULD AVOID TYING IT FORMALLY TO ANY EXISTING INTERNATIONAL BODIES.

THE PRECISE FORM OF ORGANIZATION SHOULD BE DECIDED UPON FOLLOWING DISCUSSIONS WITH INTERESTED COUNTRIES. THE BASIC CONCEPT WOULD BE TO ESTABLISH A NUMBER OF COORDINATED RESEARCH AND STUDY PROGRAMS FOR EXISTING REACTOR FUEL CYCLES AND FUTURE FUEL CYCLE ALTERNATIVES. THE EFFORTS IN SOME OF THESE AREAS ARE RELATED TO ON-GOING PROGRAMS AND COULD START IMMEDIATELY. IN ANY EVENT, EFFORTS IN EACH MAJOR AREA WOULD START AS SOON AS POSSIBLE WITH AS MANY COUNTRIES AS ARE INTERESTED IN THIS AREA. EACH ASPECT WOULD BE COORDINATED AS APPROPRIATE BY IN-
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INTERESTED COUNTRIES; FOR EXAMPLE, A LEAD COUNTRY APPROACH MIGHT BE UTILIZED. COUNTRIES INTERESTED IN PARTICIPATING IN RESEARCH AND EVALUATION IN THAT PARTICULAR AREA WOULD WORK TOGETHER ON A BILATERAL BASIS. ORGANIZATIONALLY,

COUNTRIES MIGHT COORDINATE THE OVERALL INFCEP PROGRAM THROUGH PARTICIPATION IN A STEERING GROUP WHICH WOULD MEET PERIODICALLY. INTERNATIONAL INSTITUTIONS MIGHT ALSO PARTICIPATE AS APPROPRIATE.

WE MIGHT ALSO CONSIDER WAYS TO MORE BROADLY EXCHANGE INFORMATION AMONG PARTICIPANTS IN ALL THE RESEARCH AREAS AS WELL AS WITH OTHER INTERESTED PARTIES WISHING TO BE ASSOCIATED WITH THE EVALUATION PROGRAM, SUCH AS AN ANNUAL REVIEW.

III. POSSIBLE TECHNICAL ELEMENTS.

SPECIFIC STUDIES WOULD FOCUS ON PROBLEMS ASSOCIATED WITH THE CURRENT REACTOR FUEL CYCLES AS WELL AS ON ALTERNATIVE FUTURE FUEL CYCLE TECHNOLOGIES.

(A) CURRENT REACTOR FUEL CYCLES.

RESEARCH/STUDIES ON CURRENT FUEL CYCLES WOULD FOCUS ON THE WAYS TO INCREASE THE NEAR-TERM AND LONGER-TERM AVAILABILITY OF FUEL AND OF SPENT FUEL STORAGE.

(1) FUEL AVAILABILITY.

SPECIFIC AREAS FOR INTERNATIONAL STUDY WOULD INCLUDE:

--URANIUM AVAILABILITY, GOING BEYOND DISCUSSION OF WORLD-WIDE URANIUM RESOURCES TO CONSIDER PROGRAMS FOR COORDINATED EXPLORATION, JOINT RESOURCE DEVELOPMENT AND RELIABLE EXPORT ARRANGEMENTS; A PARALLEL STUDY ON THORIUM
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AVAILABILITY COULD ALSO BE UNDERTAKEN;

--ENRICHMENT AVAILABILITY TO INCLUDE JOINT PLANNING OF FUTURE ENRICHMENT CAPACITIES TO INSURE A BUYERS MARKET AND CROSS-INVESTMENT OPPORTUNITIES;

--INSTITUTIONAL ARRANGEMENTS FOR ASSURING LONG-TERM FUEL SUPPLY SUCH AS BILATERAL SUPPLIER-CONSUMER GUARANTEES, MULTINATIONAL ARRANGEMENTS THAT WOULD PERMIT CONSUMER INVESTMENT IN ENRICHMENT SERVICES AND FUEL POOLING AND OTHER INTERNATIONAL MECHANISMS TO INSURE ACCESS ON A NON-DISCRIMINATORY BASIS TO REACTOR FUEL BY CONSUMER COUNTRIES MEETING NON-PROLIFERATION CONSTRAINTS.

(2) SPENT FUEL STORAGE.

WORK IN THIS AREA COULD INCLUDE:

--COORDINATED RESEARCH, INFORMATION EXCHANGE AND TECHNICAL AID IN NEAR-TERM OPTIONS FOR INCREASING SPENT FUEL STORAGE INCLUDING TECHNOLOGIES FOR MORE EFFICIENT UTILIZATION OF EXISTING SPENT FUEL CAPACITY (E.G., POISON BORON RACKS) AND TECHNOLOGIES FOR RAPIDLY INSTALLING ADDITIONAL POOL CAPACITY AND PROVISION OF SAFE AND ECONOMIC TRANSPORTATION OF SPENT FUEL;

--POSSIBLE ESTABLISHMENT OF INTERNATIONAL REPOSITORIES; STUDIES COULD PROCEED ON A REGIONAL BASIS TO ACTIVELY ASSESS SITES FOR SUCH REPOSITORIES AND DEVELOP LEGAL, FINANCIAL AND INSTITUTIONAL FRAMEWORKS FOR BRINGING SUCH REPOSITORIES RAPIDLY INTO EXISTENCE; AND,

--LONG-TERM RETRIEVABLE AND PERMANENT DISPOSAL; THIS WOULD INCLUDE CONSIDERATION OF VARIOUS RESEARCH CONCEPTS AND COMPARISON OF EXPERIMENTAL RESULTS OF ON-GOING RESEARCH ON RETRIEVABLE STORAGE TECHNOLOGIES.

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(B) ALTERNATIVE FUEL CYCLE TECHNOLOGIES.

(1) METHODS TO INCREASE ONCE-THROUGH URANIUM UTILIZATION IN LWRS AND HWRS.

--RESEARCH IN THIS AREA WOULD EXAMINE VARIOUS TECHNICAL MEANS TO INCREASE ONCE-THROUGH BURN-UP BASED ON PRESENT LWR OR HWR TECHNOLOGY, SUCH AS OPTIMIZED FUEL AND LOADING DESIGNS, AND SPECTRAL SHIFT MODIFICATIONS THAT WOULD SIGNIFICANTLY INCREASE FUEL UTILIZATION AND REACTOR EFFICIENCY.

(2) ADVANCED REACTORS, BREEDER OPTIONS AND THORIUM USE.

RESEARCH PROGRAMS IN THIS AREA WOULD FOCUS ON:

--HTR APPLICATIONS USING LOW-ENRICHED URANIUM AND/OR THORIUM;

--VARIOUS BREEDER CONCEPTS, INCLUDING LIGHT WATER BREEDER, AND THORIUM BREEDER CONCEPTS. WE WILL BE PARTICULARLY INTERESTED IN THOSE CONCEPTS WHICH, WHILE REQUIRING SENSITIVE FUELS AND FUEL CYCLE ELEMENTS, WOULD ALSO SUPPORT EXISTING OR FUTURE NON-SENSITIVE REACTORS CYCLES;

--OTHER ADVANCED REACTOR CONCEPTS. THIS WOULD INCLUDE RESEARCH ON REACTOR POSSIBILITIES THAT ARE IN THE CONCEPTUAL RATHER THAN EXPERIMENTAL STAGE, SUCH AS ACCELERATOR/REACTOR CONCEPTS, HOMOGENEOUS REACTORS AND

FUSION REACTOR CONCEPTS.

(3) REPROCESSING AND RELATED TECHNICAL ALTERNATIVES.

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EFFORTS IN THIS AREA WOULD FOCUS ON:

--ANALYTICAL STUDIES OF THE ECONOMIC AND ENVIRONMENTAL ASPECTS OF REPROCESSING AND RECYCLE. THE US WOULD BE PREPARED TO SHARE WITH OTHER COUNTRIES THE FINDINGS OF ITS EXTENSIVE RECENT WORK ON THE ECONOMIC AND ENVIRONMENTAL AFFECTS OF REPROCESSING AND RECYCLE.

--WITH REGARD TO REPROCESSING, EVALUATION OF POSSIBLE FUTURE INTERNATIONAL ARRANGEMENTS TO REDUCE PROLIFERATION RISKS, ASSOCIATED WITH ABROGATION OR TERMINATION OF SAFEGUARDS;

--TECHNICAL ALTERNATIVES TO REPROCESSING, TO INCLUDE INTERNATIONAL EVALUATION OF THE NON-PROLIFERATION, PHYSICAL PROTECTION AND ECONOMIC IMPLICATIONS OF TECHNIQUES SUCH AS SEPARATING URANIUM ONLY, AND PARTIAL COPROCESSING (E.G., SPIKING THE URANIUM-PLUTONIUM STREAM WITH LONG-LIFE RADIOACTIVE ACTINIDES). END TEXT.

FYI. IF ASKED ABOUT WHETHER OPERATIONAL REPROCESSING IS IN INFCEP:

--WE REGONIZE THAT OTHER COUNTRIES WITH EXISTING FACILITIES MAY CHOOSE TO DO THEIR OWN OPERATIONAL EVALUATION WORK ON SAFEGUARDS, ECONOMICS, SAFETY AND OTHER RELATED FUEL CYCLE ACTIVITIES, BUT THE US, FOR ITS PART, WOULD NOT BE PREPARED TO FUND OR PARTICIPATE IN CONVENTIONAL

REPROCESSING ACTIVITIES. END FYI.

5. ACTION REQUESTED: EMBASSIES ARE REQUESTED TO FORWARD COPY OF FOREGOING NON-PAPER TO APPROPRIATE OFFICIAL IN HOST GOVERNMENTS, NOTING THAT US PLANS TO USE IT AS BASIS FOR DISCUSSIONS ON INFCEP AT LONDON SUPPLIERS MEETING. IN SO DOING, YOU SHOULD DRAW ON PARAS 1 AND 2 ABOVE.

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6. FOR US MISSION IAEA: DEPARTMENT WOULD APPRECIATE MISSION VIEWS ON APPROPRIATE TIMING FOR PROVIDING COPY OF NON-PAPER TO EKLUND AND/OR OTHER OFFICIALS IN SECRETARIAT, I.E., WHETHER NOW OR AFTER LONDON MEETING SO AS TO INCORPORATE DESIRED CHANGES BY OTHER SUPPLIERS AND BEFORE DISTRIBUTION TO KEY CONSUMER COUNTRIES AT SALZBURG.

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APPROVED BY: OES/NET/RD:JPBORIGHT

D:DENNIS LAMB (SUBS)

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FM SECSTATE WASHDC

TO AMCONSUL BOMBAY IMMEDIATE

C O N F I D E N T I A L STATE 091828

EXDIS

FOLLOWING TEL SENT ACTION BRASILIA, BELGRADE, TEHRAN, ISLAMABAD, MADRID, NEW DELHI, MEXICO, LAGOS, EC BRUSSELS, USUN NEW YORK, OECD PARIS, CANBERRA, BUENOS AIRES, HELSINKI, MANILA, CARACAS FROM STATE APRIL 26:

QUOTE C O N F I D E N T I A L STATE 091828

EXDIS

FOLLOWING REPEAT STATE 091828 ACT ON IAEA VIENNA BONN BRUSSELS BERN LONDON THE HAGUE P

AGUE PARIS WARSAW MOSCOW
BERLIN OTTAWA ROME TOKYO STOCKHOLM 23 APR 77

QUOTE

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FM SECSTATE WASHDC

TO AMEMBASSY BRASILIA IMMEDIATE

AMEMBASSY BELGRADE IMMEDIATE

AMEMBASSY TEHRAN IMMEDIATE

AMEMBASSY ISLAMABAD IMMEDIATE

AMEMBASSY MADRID IMMEDIATE

AMEMBASSY NEW DELHI IMMEDIATE

AMEMBASSY MEXICO IMMEDIATE

AMEMBASSY LAGOS IMMEDIATE

USMISSION EC BRUSSELS IMMEDIATE

USMISSION USUN NEW YORK IMMEDIATE

USMISSION OECD PARIS IMMEDIATE

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1. AS A FOLLOW-UP TO PRESIDENT'S NUCLEAR POLICY STATEMENT OF APRIL 7, WE PLAN TO INITIATE DISCUSSIONS OF ORGANIZATIONAL AND SUBSTANTIVE ELEMENTS OF PROPOSED INTERNATIONAL NUCLEAR FUEL CYCLE EVALUATION PROGRAM IN A NUMBER OF FORUMS. THIS INCLUDES EXPLORATORY DISCUSSIONS WITH OTHER SUPPLIERS IN LONDON IN MULTILATERAL MEETING APRIL 28-29 AND ASSOCIATED BILATERALS AND WITH KEY CONSUMER COUNTRIES IN MARGINS OF SALZBURG CONFERENCE.

2. SUCCESSFUL INITIATION OF EVALUATION PROGRAM INCLUDING

BROADEST POSSIBLE ACCEPTANCE AND PARTICIPATION IS ESSENTIAL ELEMENT OF OUR OVERALL NON-PROLIFERATION STRATEGY. ITS IMPORTANCE HAS BEEN SHARPENED BY ADVERSE REACTION AT FEBRUARY BG MEETING AND AT PERSEPOLIS TECHNOLOGY MEETING TO RESTRAINT BY SUPPLIERS IN EXPORT OF SENSITIVE TECHNOLOGIES AND ATTEMPTS TO UPGRADE SAFEGUARDS AND CONTROLS.

3. FOLLOWING IS PROPOSED NON-PAPER OUTLINING POSSIBLE FRAMEWORK OF EVALUATION PROGRAM.

4. BEGIN TEXT. THE INTERNATIONAL NUCLEAR FUEL CYCLE EVALUATION PROGRAM (INFCEP) (A POSSIBLE APPROACH).

I. PURPOSE AND SCOPE.
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THE PURPOSE OF THE INTERNATIONAL EVALUATION WOULD BE TO ENHANCE INTERNATIONAL COOPERATION IN DEALING WITH COMMON CONCERNS RELATED TO NUCLEAR POWER, AND TO EXAMINE PRESENT AND FUTURE FUEL CYCLE ALTERNATIVES THAT WOULD REDUCE FUTURE PROLIFERATION RISKS WHILE MEETING WORLD ENERGY NEEDS. THE PROGRAM SCOPE WOULD INCLUDE TWO MAJOR ELEMENTS:

--STUDY OF CURRENT GENERATION REACTORS WITH A VIEW TOWARD SOLVING FRONT-END PROBLEMS (E.G., FUEL ASSURANCES AND WAYS TO EXTEND UTILIZATION OF URANIUM AND OTHER FERTILE/FISSILE MATERIAL) AND BACK-END PROBLEMS (E.G., SHORT-TERM AND LONG-TERM SPENT FUEL STORAGE); AND,

--STUDY OF FUTURE GENERATION REACTORS AND FUEL CYCLES WITH EMPHASIS ON CYCLES THAT UTILIZE NON-SENSITIVE FUELS AND ON INTERNATIONAL ARRANGEMENTS FOR REDUCING PROLIFERATION RISKS IN THE MORE SENSITIVE ELEMENTS OF THE VARIOUS FUEL CYCLES.

II. INTERNATIONAL ORGANIZATION.

INFCEP WOULD INVOLVE PARTICIPATION OF BOTH MAJOR INDUSTRIAL AND KEY DEVELOPING COUNTRIES IN A TECHNICAL EVALUATION OF NUCLEAR FUEL CYCLE ALTERNATIVES. IT WOULD BE DESIRABLE TO UTILIZE EXISTING CAPABILITIES TO THE EXTENT PRACTICABLE (E.G., THE IAEA FORUM AND SECRETARIAT CAPABILITIES) BUT WE SHOULD AVOID TYING IT FORMALLY TO ANY EXISTING INTERNATIONAL BODIES.

THE PRECISE FORM OF ORGANIZATION SHOULD BE DECIDED UPON FOLLOWING DISCUSSIONS WITH INTERESTED COUNTRIES. THE BASIC CONCEPT WOULD BE TO ESTABLISH A NUMBER OF COORDINATED RESEARCH AND STUDY PROGRAMS FOR EXISTING REACTOR FUEL CYCLES AND FUTURE FUEL CYCLE ALTERNATIVES. THE EF-

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FORTS IN SOME OF THESE AREAS ARE RELATED TO ON-GOING PROGRAMS AND COULD START IMMEDIATELY. IN ANY EVENT, EFFORTS IN EACH MAJOR AREA WOULD START AS SOON AS POSSIBLE WITH AS MANY COUNTRIES AS ARE INTERESTED IN THIS AREA. EACH ASPECT WOULD BE COORDINATED AS APPROPRIATE BY INTERESTED COUNTRIES; FOR EXAMPLE, A LEAD COUNTRY APPROACH MIGHT BE UTILIZED. COUNTRIES INTERESTED IN PARTICIPATING IN RESEARCH AND EVALUATION IN THAT PARTICULAR AREA WOULD WORK TOGETHER ON A BILATERAL BASIS. ORGANIZATIONALLY,

COUNTRIES MIGHT COORDINATE THE OVERALL INFCEP PROGRAM THROUGH PARTICIPATION IN A STEERING GROUP WHICH WOULD MEET PERIODICALLY. INTERNATIONAL INSTITUTIONS MIGHT ALSO PARTICIPATE AS APPROPRIATE.

WE MIGHT ALSO CONSIDER WAYS TO MORE BROADLY EXCHANGE INFORMATION AMONG PARTICIPANTS IN ALL THE RESEARCH AREAS AS WELL AS WITH OTHER INTERESTED PARTIES WISHING TO BE ASSOCIATED WITH THE EVALUATION PROGRAM, SUCH AS AN ANNUAL REVIEW.

III. POSSIBLE TECHNICAL ELEMENTS.

SPECIFIC STUDIES WOULD FOCUS ON PROBLEMS ASSOCIATED WITH THE CURRENT REACTOR FUEL CYCLES AS WELL AS ON ALTERNATIVE FUTURE FUEL CYCLE TECHNOLOGIES.

(A) CURRENT REACTOR FUEL CYCLES.

RESEARCH/STUDIES ON CURRENT FUEL CYCLES WOULD FOCUS ON THE WAYS TO INCREASE THE NEAR-TERM AND LONGER-TERM AVAILABILITY OF FUEL AND OF SPENT FUEL STORAGE.

(1) FUEL AVAILABILITY.

SPECIFIC AREAS FOR INTERNATIONAL STUDY WOULD INCLUDE:
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--URANIUM AVAILABILITY, GOING BEYOND DISCUSSION OF WORLD-WIDE URANIUM RESOURCES TO CONSIDER PROGRAMS FOR COORDINATED EXPLORATION, JOINT RESOURCE DEVELOPMENT AND RELIABLE EXPORT ARRANGEMENTS; A PARALLEL STUDY ON THORIUM AVAILABILITY COULD ALSO BE UNDERTAKEN;

--ENRICHMENT AVAILABILITY TO INCLUDE JOINT PLANNING OF FUTURE ENRICHMENT CAPACITIES TO INSURE A BUYERS MARKET AND CROSS-INVESTMENT OPPORTUNITIES;

--INSTITUTIONAL ARRANGEMENTS FOR ASSURING LONG-TERM FUEL

SUPPLY SUCH AS BILATERAL SUPPLIER-CONSUMER GUARANTEES, MULTINATIONAL ARRANGEMENTS THAT WOULD PERMIT CONSUMER INVESTMENT IN ENRICHMENT SERVICES AND FUEL POOLING AND OTHER INTERNATIONAL MECHANISMS TO INSURE ACCESS ON A NON-DISCRIMINATORY BASIS TO REACTOR FUEL BY CONSUMER COUNTRIES MEETING NON-PROLIFERATION CONSTRAINTS.

(2) SPENT FUEL STORAGE.

WORK IN THIS AREA COULD INCLUDE:

--COORDINATED RESEARCH, INFORMATION EXCHANGE AND TECHNICAL AID IN NEAR-TERM OPTIONS FOR INCREASING SPENT FUEL STORAGE INCLUDING TECHNOLOGIES FOR MORE EFFICIENT UTILIZATION OF EXISTING SPENT FUEL CAPACITY (E.G., POISON BORON RACKS) AND TECHNOLOGIES FOR RAPIDLY INSTALLING ADDITIONAL POOL CAPACITY AND PROVISION OF SAFE AND ECONOMIC TRANSPORTATION OF SPENT FUEL;

--POSSIBLE ESTABLISHMENT OF INTERNATIONAL REPOSITORIES; STUDIES COULD PROCEED ON A REGIONAL BASIS TO ACTIVELY ASSESS SITES FOR SUCH REPOSITORIES AND DEVELOP LEGAL, FINANCIAL AND INSTITUTIONAL FRAMEWORKS FOR BRINGING SUCH REPOSITORIES RAPIDLY INTO EXISTENCE; AND,
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--LONG-TERM RETRIEVABLE AND PERMANENT DISPOSAL; THIS WOULD INCLUDE CONSIDERATION OF VARIOUS RESEARCH CONCEPTS AND COMPARISON OF EXPERIMENTAL RESULTS OF ON-GOING RESEARCH ON RETRIEVABLE STORAGE TECHNOLOGIES.

(B) ALTERNATIVE FUEL CYCLE TECHNOLOGIES.

(1) METHODS TO INCREASE ONCE-THROUGH URANIUM UTILIZATION IN LWRS AND HWRS.

--RESEARCH IN THIS AREA WOULD EXAMINE VARIOUS TECHNICAL MEANS TO INCREASE ONCE-THROUGH BURN-UP BASED ON PRESENT LWR OR HWR TECHNOLOGY, SUCH AS OPTIMIZED FUEL AND LOADING DESIGNS, AND SPECTRAL SHIFT MODIFICATIONS THAT WOULD SIGNIFICANTLY INCREASE FUEL UTILIZATION AND REACTOR EFFICIENCY.

(2) ADVANCED REACTORS, BREEDER OPTIONS AND THORIUM USE.

RESEARCH PROGRAMS IN THIS AREA WOULD FOCUS ON:

--HTR APPLICATIONS USING LOW-ENRICHED URANIUM AND/OR THORIUM;

--VARIOUS BREEDER CONCEPTS, INCLUDING LIGHT WATER BREEDER, AND THORIUM BREEDER CONCEPTS. WE WILL BE PARTI-

CULARLY INTERESTED IN THOSE CONCEPTS WHICH, WHILE RE-
QUIRING SENSITIVE FUELS AND FUEL CYCLE ELEMENTS, WOULD
ALSO SUPPORT EXISTING OR FUTURE NON-SENSITIVE REACTORS
CYCLES;

--OTHER ADVANCED REACTOR CONCEPTS. THIS WOULD INCLUDE
RESEARCH ON REACTOR POSSIBILITIES THAT ARE IN THE CON-
CEPTUAL RATHER THAN EXPERIMENTAL STAGE, SUCH AS AC-
CELERATOR/REACTOR CONCEPTS, HOMOGENEOUS REACTORS AND
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FUSION REACTOR CONCEPTS.

(3) REPROCESSING AND RELATED TECHNICAL ALTERNATIVES.
EFFORTS IN THIS AREA WOULD FOCUS ON:

--ANALYTICAL STUDIES OF THE ECONOMIC AND ENVIRONMENTAL
ASPECTS OF REPROCESSING AND RECYCLE. THE US WOULD BE
PREPARED TO SHARE WITH OTHER COUNTRIES THE FINDINGS
OF ITS EXTENSIVE RECENT WORK ON THE ECONOMIC AND ENVIRON-
MENTAL AFFECTS OF REPROCESSING AND RECYCLE.

--WITH REGARD TO REPROCESSING, EVALUATION OF POSSIBLE
FUTURE INTERNATIONAL ARRANGEMENTS TO REDUCE PROLIFERA-
TION RISKS, ASSOCIATED WITH ABROGATION OR TERMINATION OF
SAFEGUARDS;

--TECHNICAL ALTERNATIVES TO REPROCESSING, TO INCLUDE
INTERNATIONAL EVALUATION OF THE NON-PROLIFERATION, PHY-
SICAL PROTECTION AND ECONOMIC IMPLICATIONS OF TECHNIQUES
SUCH AS SEPARATING URANIUM ONLY, AND PARTIAL COPROCES-
SING (E.G., SPIKING THE URANIUM-PLUTONIUM STREAM WITH
LONG-LIFE RADIOACTIVE ACTINIDES). END TEXT.

FYI. IF ASKED ABOUT WHETHER OPERATIONAL REPROCESSING
IS IN INFCEP:

--WE REGONIZE THAT OTHER COUNTRIES WITH EXISTING FACI-
LITIES MAY CHOOSE TO DO THEIR OWN OPERATIONAL EVALUATION
WORK ON SAFEGUARDS, ECONOMICS, SAFETY AND OTHER RELATED
FUEL CYCLE ACTIVITIES, BUT THE US, FOR ITS PART, WOULD
NOT BE PREPARED TO FUND OR PARTICIPATE IN CONVENTIONAL
REPROCESSING ACTIVITIES. END FYI.

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IN HOST GOVERNMENTS, NOTING THAT US PLANS TO USE IT AS
BASIS FOR DISCUSSIONS ON INFCEP AT LONDON SUPPLIERS

MEETING. IN SO DOING, YOU SHOULD DRAW ON PARAS 1 AND 2 ABOVE.

6. FOR US MISSION IAEA: DEPARTMENT WOULD APPRECIATE MISSION VIEWS ON APPROPRIATE TIMING FOR PROVIDING COPY OF NON-PAPER TO EKLUND AND/OR OTHER OFFICIALS IN SECRETARIAT, I.E., WHETHER NOW OR AFTER LONDON MEETING SO AS TO INCORPORATE DESIRED CHANGES BY OTHER SUPPLIERS AND BEFORE DISTRIBUTION TO KEY CONSUMER COUNTRIES AT SALZBURG.
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